

# An Android Application Studhelper for Engineering Students

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**Abstract**—The paper has been presented with a system that is created on the android platform targeting the students studying in an engineering institute. The application is created for effortless day to day official work in an institute. Students will be served with the benefits like compilation of branch wise question papers, general aptitude questions, video lectures, newspapers, with some interesting features like parent-teacher portal, feedback system and ask your queries block. The application is designed using core java coding, layout is fabricated with xml extension, complete creation is done on android studio. Login authentication is developed via Firebase Auth, newspapers have been linked through their URL, video lectures are engrossed with API and a separate website is created for parent-teacher interaction. Based on the above mentioned ideology, We are fabricating an application using android design studio kit which is majorly concerned for the effortless access of all the essentials required in an institute.

**Index Terms**—Firebase Auth, xml, URL, API

## I. INTRODUCTION

World is changing its pace at regular front, so as the technologies. Everyday, we are introduced with some or the other fresh development in the field of science and technology. Keeping a constant look over this changing world is a task in itself, but the services it bring us worth just like Mobile phones. Mobile phones have been evolved with stupendous operating systems throughout. One of the amazing operating system is Android. Android has been a fast developing operating system which has over taken other operating systems. The catchy feature of android is its versatility of several creations. It allows to develop simplest form of the application. The proposed application is one of the easiest approached system which is emphasised on the trouble-free piece of work engaged at institute on daily basis. Perfect use of digitalization trend can be witnessed through this application. Comfort has been the major concern while creation of this application. Accessing important documents, papers, video lectures and ofcourse newspapers just through a click is really very less tiring. Further sections will be focussed on the methodology and description of the technologies used while making this application.

## II. LITERATURE REVIEW

In this [1] paper, class and staff Locator application has been developed via capstone. The Class And Staff Locator Application is used to locate classrooms and allocate staffs as per mentioned in their schedule. GPS (Global Positioning System) and Google Maps have been joined to this app, which plays the role of locating and tracking to reach desired destination. Location manager has been used for enabling the GPS system in java coding section which uses longitude and latitude of the device and hence enabling users to find current location of this application, map library has been used to convert longitude and latitude values into address of streets. Some Location based services intrudes Maps, MapActivity (a Location based API which is used to show location on the map). Map View has been used to display a view of map. MapActivity is used for controlling MapView. Location based API is used to locate user's current position and display that location on map and Google maps has been linked using Fragment Activity in coding section.

In this [2] paper, the development of a real-time response system has been done to intensify student's involvement in a class by means of keeping track of the attendance and participation of students. The lecturer keeps track of every student's attendance. This helps to enhance the participation of students and improves their attendance record. The access card feature has been developed and card is provided to every student and access is granted to get the teaching materials provided by the teachers. This is basically for the shy students those who are not very frank to the atmosphere. This way, teachers keeps a note of the progress of the whole class.

In this [3] paper, a test-based assessment system has been proposed. Students can take tests or can review their past tests on mobile devices, which reduces the hefty task of marking much number of test papers. Database of the proposed system consists of basic level tests for junior high school students in Taiwan. Teachers are having the benefit of composing digital test sheet by selecting questions from the given database. Teachers are also able to design their own questions. After the

completion of the test, test results can be obtained immediately by the teachers.

In this [4] paper, a mobile application has been developed for academic library which involves identifying services provided through library relevant to particular mobile user, development costs has been cut short by utilization of a number of open-source components, and results of the application has been evaluated. The features of the system includes: Library mobile website content, Mobile catalog, QR code scanner, and an Interactive library map.

In this [5] paper a feedback system for multiple user has been developed for a better learning in classrooms (rather cooperative). This system provides interactive mobile learning through a game-based approach to improve student's a collaborative learning. Students are learning to work as a team to accomplish a common aim, this is making them adaptive to the atmosphere and social development. The app has been intervened into different parts: Streaming camera, Media stream server, Screen recorder and Streaming video wall.

In this [6] paper, the Android application development challenge for colleges have been surveyed. This is an Android developer contest aimed at the college students in China. This contest had been held for two times since 2010. The main motive of this challenge is to motivate the college students to design and implement their applications using the Android platform. It gives students an opportunity to showcase their creativity and learn about the development of Android applications. The target of this contest is to keep the interest in the students intact rather increasing and to acknowledge other Students from other universities and regions about this contest so that an awareness about such development contest takes place and more number of students participate. The Android Application Development College Challenge is organised by Google to provide a platform to college students so that they can discuss and communicate the ideas and technology. The contest not only elevate student's creativity and practice, but also teaches about being a team player.

In this [7] paper, a mobile application named Fer Droid has been developed used for the collection of data from different students through this application. This application saves students precious time and gives an opportunity to contribute their time on other activities like studying, leisures, extra-cirricular activities. This application is both subjective and objective as per the student's survey. The analysis of Fer Droid has concluded that students happy with this application and satisfied at the same time as they can retrieve information quicker than earlier by the help of this application.

In this [8] paper, a simple programming methodology has been developed which is based on MVP architecture to help the students to fabricate mobile applications in Android. The main idea of this is to design a set of methods, which is sorted and simple, so that any student can learn and develop a complete android app. The MVP architecture comprises of: model (that is enclosed with business objects), view (that comprises of all the UI components which makes the application and

forwards the interaction in between operations to the presenter) and presenter (that contains all the logic for the application).

In this [9] paper, an online physical simulation platform has been developed for Android programmers. Users those are basically students upload the Android applications to the server, which is connected to many mobiles. The screen of the phone is visible to the client because of the VNC Sever. This paper has proposed an online platform for physical simulation in Android programming for the interested students. The online simulation platform consists of three layers: the Device Layer , it is a collection of embedded software running on smart phones, next is the Application Service Layer which is a bridge between the other two layers and it runs on an application server, next is the Operation Layer which is designed for the students living in remote areas, who can access the smart phone via a VNC Viewer client.

In this [10] paper, an university based application has been created which includes the university level stuffs those are list of holidays, syllabus, question papers and academic calender in the form of pdf that is stored into google drive for easy access. It includes another catchy feature which is "Ask your queries" which will let the users to clear any queries regarding the application usage or the material usage. Students are able to enjoy the easy access of the important requirements through this application. Application .apk file has been retrived on the android device to access the application.

In this [11] paper, deals with the institute based requirements which help students to access the documents from a single place. Various forms and formats have been included in the application in the form of pdf and stored in google drive. Application size is also very nominal, won't acquire much space which is one of the advantages of this app. One exciting feature of this application is "feedback" portal, which lets the users to share their ratings and helps the developers to acknowledge the factual description of the application usage leading this app to improve and making it better.

### III. METHODOLOGY

The system has been designed on android for keeping the versatility of the application building intact. This application is the summed up version of all the essentials for the graduation level students. System proposed is fabricated on android studio with the layout designing done on .xml extension. Students will be delighted to have all in one featured app. This application centralize itself on the effortless access of the question papers, video lectures, newspaper etc. at a single place. Students will be served with most comfortable access related to their education entitled with the university. As far as the technicalities are concerned, the features which catches eye are the video lectures linked in the app. itself. This is done through linking the API in the coding section. Parent-teacher portal has been designed and a separate forum has been fabricated for the interaction purpose. Newspapers have been added through their API source code (source code is must to avoid copyright issues).

## A. Architecture

The above figure shows the flow chart of the proposed architecture.

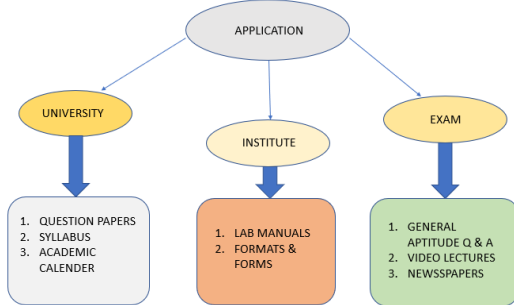


Fig. 1. System Architecture

Technologies used are described :

1. FIREBASE MESSAGING SERVICES: firebase messaging services has been used to synchronise application data across clients. It is a platform solution for messages and notification for android and without any cost. The coding has been shared :-

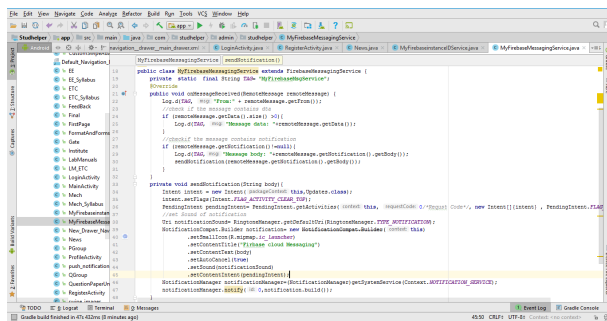


Fig. 2. Coding firebase messaging service

2. NEWSPAPER LINKING: newspaper has been linked to the app through its API in coding section. Following are the results:

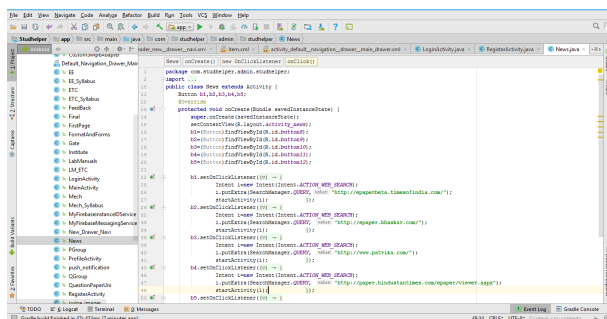


Fig. 3. Newspaper linking code

3. SEPARATE WEBSITE: application will contain separate website of its own for the parent-teacher interaction and other app related information will be included.

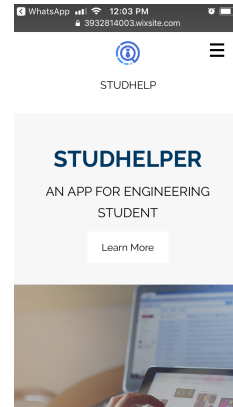


Fig. 4. Glimpse of Application website

## IV. RESULTS

The experimental results are shown below:

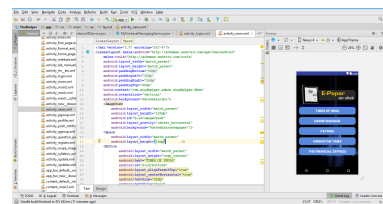


Fig. 5. News xml file

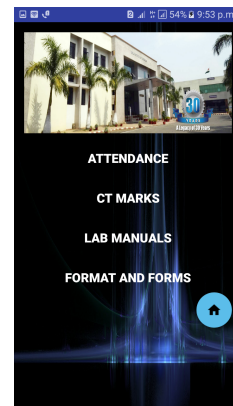


Fig. 6. Application screen view with institute section

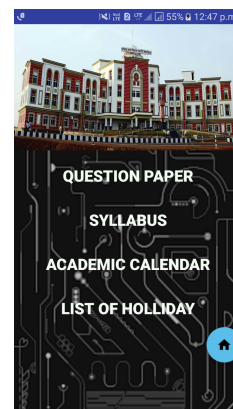


Fig. 7. Snapshot of application of university section

## V. CONCLUSION

This paper has been built in a way to make any reader understand the complete working of the application. This application will not only give students a platform of every usefull documents but will keep them entertained by using the ask your queries block, video lectures and e-newspaper section. This application gives a complete exposure to the new and old questions, prior requirement of any student studying in any graduation school. Main moto of this application is user friendly and anyone can use it very easily moreover, this will capture only few MB of spcace in any android device.

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